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**XII. *A second Letter of the Rev. William Henry, D. D. to the right honorable the Lord Cadogan, F. R. S. concerning the Copper Springs in the County of Wicklow in Ireland.***

My Lord,

Strabane, May 31, 1752.

Read Feb. 15,

1753

**I** RECEIVED this day the honour of your lordship's letter of the 18th, and must confess the great satisfaction, which I felt, in finding the account I sent of the copper mines in the county of Wicklow, acceptable to your lordship.

It would be too presuming in me, to think such a rough account of these curiosities worthy of the attention of so great and learned a body as the Royal Society: but, as your lordship is the most competent judge, and the truly great and learned are better pleased with important discoveries in nature, than with fine polishing, I leave it to your lordship to communicate the account I sent, to the Royal Society, in whatever manner you please. One thing I will pawn my reputation on, that every tittle in the account has the strictest truth to recommend it.

I did not see the iron shovel, which, by lying in the water, and being thereby incrustated with copper, gave the first occasion to this important discovery; for this happened some time ago; and the shovel is long since gone. But I was informed on the spot of this incident by the miners and workmen, of whom there were a great number. It was afterwards confirmed to me by the managers and proprietors of the mines.

As

As to the other point of the iron bars impregnating the copper, in the manner described in my letter, I examined it with the utmost attention, and was an eye-witness to it in all its progress, and so are thousands. I saw the masons laying a chain of new stone troughs, or pits, for the copper-water to run through. I saw men laying the iron bars on wooden rafters in these troughs. I had the iron bars lifted up out of some pits, where they had lain in the water from one to eight months, and saw them incrusted with the copper rust; and corroded to thin plates, in proportion to the time they had lain in the water. I saw some of the pits emptied, wherein the iron bars were wholly dissolved; and the labourers throwing up with shovels the copper, which lay on the flags in the bottom of the pit, like mud: and out of one of the heaps of copper-mud, which I saw thrown up, I took that very parcel of copper dust, which I sent to your lordship. It was like mud, as it lay wet in the heap; but became dust, as it dried. I also saw several pieces of copper, which I was informed were made out of this kind of copper-mud. And Dr. Dumaingbray, in his philosophical lectures in Dublin, shew'd to us a plate of pure copper made in this manner; which led me to go to the mines, and there make this minute inquiry.

I must take notice of one improvement, which I omitted in my letter. To prevent any dirt or mud from being carried out of the mines, by the streams, which are let into the pits, where the iron bars are deposited, the stream, as it issues out of the level, is collected into a large deep basin, where all the dirt subsides;

fides; and the clear water only is from the surface of the bafon let out into the pits.

If there be any thing, wherein I may further satisfy your lordship's inquiries in this or any other matter, your commands shall most chearfully be obey'd by

Your lordship's much obliged, and

most obedient humble servant,

William Henry.

XIII. *The Construction of the logarithmic Lines on the Gunter's Scale; by Mr. John Robertson, F. R. S.*

Read June 13, 1752. **H**AVING lately had occasion to treat on the construction of the Gunter's scale, I searched several books, wherein I suspected were contained the reasons of the common methods of laying down the logarithmic lines usually put on those scales: but not finding, either from my own search, or that of my friends, any satisfactory account of this matter, I drew up the following paper, to be laid before the Royal Society.

The Gunter's scale \* is an instrument almost universally known, and amply described by many writers; therefore

\* So called from its inventor Mr. Edmund Gunter, astronomy-professor in Gresham-College, from March 6, 1619, till his death, Dec. 10, 1626.